



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200  
Fax 613 632-5246

**D135-1027-241**  
**Job Sheet 190487**



**Part No:** D135-1027-241

**Job Qty:** 1 pcs

**Part Name:** STD HEIGHT AFT Crosstube Assembly



**Part Weight:** 0 lbs

**Status:** New

**Priority:** Medium

**Job Created:** 2/8/19

**Job Tracking No:**

**Due Date:** 3/22/19

**Created By:** Jesse White

**Type:** SOLD

**Description:**

**Note:** D135-1027-241 REV.B IPP REV:A 17.09.08 NEW ISSUE DD VERF:DP IPP REV:B 18.11.08 AS PER DWG  
REV.B DD VERF:JFS

**Ship Via:**

DAS  
35  
9-89

chg 001

DAS  
21  
9-89

See attachment

### Bill of Materials

### Job Routing

| Op No | Operation      | Qty      | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off  |
|-------|----------------|----------|------------|----------|-----------|---------|-----------------------|-----------|-----------|
|       |                |          |            |          | Setup Hrs | Run Hrs | Workcenter / Supplier | Lead Time |           |
| 100   | Crosstubes - 1 | 1<br>pcs | 3/22/19    |          | 0.00      | 0.25    | Crosstubes - 1        |           |           |
|       |                |          |            |          |           |         | Crosstubes - 2        |           |           |
|       |                |          |            |          |           |         | Crosstubes - 3        |           |           |
|       |                |          |            |          |           |         | Crosstubes - 4        |           | AS        |
| 110   | QC 7           | 1<br>pcs | 3/22/19    |          | 0.00      | 0.00    | QC 7 - 10             |           |           |
|       |                |          |            |          |           |         | QC 7 - 13             |           |           |
|       |                |          |            |          |           |         | QC 7 - 14             |           |           |
|       |                |          |            |          |           |         | QC 7 - 15             |           |           |
|       |                |          |            |          |           |         | QC 7 - 17             |           |           |
|       |                |          |            |          |           |         | QC 7 - 18             |           |           |
|       |                |          |            |          |           |         | QC 7 - 19             |           |           |
|       |                |          |            |          |           |         | QC 7 - 2              |           |           |
|       |                |          |            |          |           |         | QC 7 - 28             |           |           |
|       |                |          |            |          |           |         | QC 7 - 3              |           |           |
|       |                |          |            |          |           |         | QC 7 - 30             |           |           |
|       |                |          |            |          |           |         | QC 7 - 34             |           |           |
|       |                |          |            |          |           |         | QC 7 - 36             |           |           |
|       |                |          |            |          |           |         | QC 7 - 37             |           |           |
|       |                |          |            |          |           |         | QC 7 - 41             |           | At 19-4-6 |
|       |                |          |            |          |           |         | QC 7 - 47             |           |           |
|       |                |          |            |          |           |         | QC 7 - 48             |           |           |
|       |                |          |            |          |           |         | QC 7 - 51             |           |           |
|       |                |          |            |          |           |         | QC 7 - 58             |           |           |
|       |                |          |            |          |           |         | QC 7 - 59             |           |           |
|       |                |          |            |          |           |         | QC 7 - 6              |           |           |
|       |                |          |            |          |           |         | QC 7 - 60             |           |           |
|       |                |          |            |          |           |         | QC 7 - 9              |           |           |
|       |                |          |            |          |           |         | QC 7 - 68             |           |           |
|       |                |          |            |          |           |         | QC 7 - 50             |           |           |
|       |                |          |            |          |           |         | QC 7 - 67             |           |           |

Plex 2/8/19 3:14 PM dart.white.jesse

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier Quality <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | MRB (QSI042)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |
| <div style="display: flex;"> <div style="flex: 1;"> <p style="font-size: small; margin: 0;">DART Aerospace Ltd.<br/>1270 Aberdeen Street<br/>Newbury, ON K6A 1K7<br/>CANADA<br/>TEL: 1 813 632-5200<br/>Email: sales@dartaero.com<br/>www.dartaerospace.com</p> <p style="font-size: x-small; margin: 5px 0;">Container No: S171956<br/>Part: D135-1027-241<br/>Job No: 190487<br/>Serial No/Batch: S171956<br/>Revision: B<br/>Inspector:<br/>Exp Date:<br/>Instructions: TC STC SH18-49 Issue 1 of 1 FAH:STG SR04276NY dated 18/11/21, E</p> </div> <div style="flex: 1; padding-left: 10px;"> <p>Product Improvement <input type="checkbox"/></p> <p>Process Improvement <input type="checkbox"/></p> <p>Human Factors <input type="checkbox"/></p> </div> </div> |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Completed By           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Lead hand / Supervisor |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | QC / QA Coordinator    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |                        |
| <input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Fit/Function                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   | Other/Details: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |



|                                   |          |         |           |                           |            |
|-----------------------------------|----------|---------|-----------|---------------------------|------------|
| 120 Handfinish - 4-1-Assembly-B4B | 1<br>pcs | 3/22/19 | 0.00 0.25 | Handfinish - 4 - 1 - B4B  | AS 19-7-6  |
|                                   |          |         |           | Handfinish - 4 - 10 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 11 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 12 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 13 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 14 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 15 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 2 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 3 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 4 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 5 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 6 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 7 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 8 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 9 - B4B  |            |
| 140 Spray Paint - 2 - B4B         | 1<br>pcs | 3/22/19 | 0.00 1.00 | Spray Paint - 1 - B4B     |            |
|                                   |          |         |           | Spray Paint - 2 - B4B     |            |
|                                   |          |         |           | Spray Paint - 3 - B4B     |            |
|                                   |          |         |           | Spray Paint - 4 - B4B     |            |
| 150 QC 14                         | 1<br>pcs | 3/22/19 | 0.00 0.00 | QC 14 - 15                |            |
|                                   |          |         |           | QC 14 - 2                 |            |
|                                   |          |         |           | QC 14 - 34                |            |
|                                   |          |         |           | QC 14 - 41                | AS 19-4-8  |
|                                   |          |         |           | QC 14 - 51                |            |
|                                   |          |         |           | QC 14 - 58                |            |
|                                   |          |         |           | QC 14 - 59                |            |
|                                   |          |         |           | QC 14 - 9                 |            |
|                                   |          |         |           | QC 14 - 68                |            |
| 154 Handfinish - 4-2-Assembly-B4B | 1<br>pcs | 3/22/19 | 0.00 0.67 | Handfinish - 4 - 1 - B4B  | AS 19-4-11 |
|                                   |          |         |           | Handfinish - 4 - 10 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 11 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 12 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 13 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 14 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 15 - B4B |            |
|                                   |          |         |           | Handfinish - 4 - 2 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 3 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 4 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 5 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 6 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 7 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 8 - B4B  |            |
|                                   |          |         |           | Handfinish - 4 - 9 - B4B  |            |
| 160 QC 5                          | 1<br>pcs | 3/22/19 | 0.00 0.00 | QC 5 - 10                 |            |
|                                   |          |         |           | QC 5 - 12                 |            |
|                                   |          |         |           | QC 5 - 17                 |            |
|                                   |          |         |           | QC 5 - 18                 |            |
|                                   |          |         |           | QC 5 - 19                 |            |
|                                   |          |         |           | QC 5 - 22                 |            |

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           |                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------|---------|-----------|----------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 24 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 3  |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 42 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 43 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 49 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 51 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 58 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 68 | DAS<br>APR 25 2018<br>9-89 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 9  |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 50 |                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         | QC 5 - 30 |                            |
| 170                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Packaging 3-1 - Stock - B4B | 1<br>pcs | 3/22/19 | 0.00 0.00 | Packaging 3 - 1 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 2 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 3 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 4 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 5 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 6 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 7 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 8 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 9 - B4B      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 10 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 11 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 12 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 13 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 14 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 15 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 16 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 17 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 18 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 19 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 20 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 21 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 22 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 23 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 24 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 25 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 26 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 27 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 28 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 29 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 30 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 31 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 32 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 33 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 34 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 35 - B4B     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | Packaging 3 - 36 - B4B     |
| 180                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | QC 21 - SA                  | 1<br>pcs | 3/22/19 | 0.00 0.00 | QC 21 - SA - 21            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | QC 21 - SA - 70            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |          |         |           | QC 21 - SA - 53            |
| Part Op <b>100</b> - (Chemical Conversion Coat per QSI005 4.1) ***PRIOR TO CHEMICAL CONVERSION*** SCRIBE DART P/N AND<br>Descriptions: B/N ON INSIDE OF CUFF PER QSI 044 6.4<br><b>110</b> - (QC7-Inspect Chemical Conversion Coat)<br><b>120</b> - HandFinish4 (Assemble as per dwg) INSTALL THREADED ROD AS PER DWG AND APPLY LOCKTITE 263<br>(NOTE 9) AND SEAL BETWEEN THE NUT AND CROSSTUBE USING SEALANT(NOTE10) 5146134 exp 10/19 (Proseal)<br><b>140</b> - Spray Paint (Spray Paint / NDT Room) ***MASK PRIOR TO PRIME AND PAINT AS PER NOTE11, BOTH ENDS***<br>1- PRIME INSIDE AND OUTSIDE PER QSI005 4.2.1.3.3 (FLOAT SKIDTUBE PRIMER) BATCH: 5152590<br>2- PAINT OUTSIDE SURFACE AS PER QSI005 4.2.2.4 (FLOAT SKIDTUBE PAINT) BATCH: 5155827 3-<br>COAT INSIDE SURFACE WITH LPS PROCYON AS PER DWG, QSI005 4.8 4- AFTER FINISH APPLY A 1 INCH<br>CENTER LINE ON TOP OF CROSSTUBE WITHIN 0.1" OF CENTERLINE QSI 044 6.1(SEE NOTE 12 AND 13)<br><b>150</b> - (QC14- Inspect Spray Paint) |                             |          |         |           |                            |

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Presservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |



**154 - \*\*\*CROSSTUBE\*\*\* ASSEMBLE AS PER DWG NOTE 13. USE SOAP AND WATER IF NECESSARY AS PER DWG NOTE 14. TORQUE BOLT TO 50-70 IN-LBS AS PER NOTE 13.**

**160 - (QC5- Inspect part completeness to step on W/O)**

**170 - (Identify as per dwg & Stock Location: \_\_\_\_\_)**

**180 - (QC21- Final Inspection - Work Order Release)**

### Job BOM

| Part / Item   | Component Name           | Quantity     | Operation                         | Container |
|---------------|--------------------------|--------------|-----------------------------------|-----------|
| D135-1027-251 | Std Height Aft Crosstube | 1 Ea (1 ea)  | 100-Crosstubes - 1                |           |
| D5511-1       | Threaded Rod             | 3 pcs (3 ea) | 100-Crosstubes - 1                |           |
| MS35650-304   | Nut                      | 6 Ea (6 ea)  | 100-Crosstubes - 1                |           |
| NAS1149D0363J | Washer                   | 6 Ea (6 ea)  | 100-Crosstubes - 1                |           |
| D5411-1       | Rubber Bushing           | 2 pcs (2 ea) | 154-Handfinish - 4-2-Assembly-B4B |           |
| D5412-041     | Crosstube Clamp Assembly | 2 pcs (2 ea) | 154-Handfinish - 4-2-Assembly-B4B |           |
| D5413-1       | Crosstube Support        | 2 pcs (2 ea) | 154-Handfinish - 4-2-Assembly-B4B |           |
| D5414-1       | Support Bolt             | 4 pcs (4 ea) | 154-Handfinish - 4-2-Assembly-B4B |           |

### Job Allocations

| Operation                         | Component Part               | Required | Inventory | Allocated |
|-----------------------------------|------------------------------|----------|-----------|-----------|
| 100-Crosstubes - 1 <i>190489</i>  | D135-1027-251 <i>5164533</i> | ①        | 2         | 0         |
|                                   | D5511-1 <i>5031947</i>       | ③        | 17        | 0         |
|                                   | MS35650-304 <i>PM137878</i>  | ⑥        | 20        | 0         |
|                                   | NAS1149D0363J <i>5152662</i> | ⑥        | 796       | 0         |
|                                   | D5411-1 <i>B151241</i>       | ②        | 30        | 0         |
| 154-Handfinish - 4-2-Assembly-B4B | D5412-041 <i>5044790</i>     | ②        | 16        | 0         |
|                                   | D5413-1 <i>5043821</i>       | ②        | 16        | 0         |
|                                   | D5414-1 <i>F163082</i>       | ④        | 38        | 0         |
|                                   |                              |          |           |           |

### Part Specifications

Specifications could not be found.

Plex 2/8/19 3:14 PM dart.white.jesse

Entered: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. \_\_\_\_\_

Route update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| Job: _____<br><br>Part No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/> | <b>DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/> </div> <div>           Eng. (Non-AW) <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Water Jet <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Quality <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                        |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Sequence #:                                                                                                                       | QTY Affected :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | MRB (QSI042)           |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                   | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | Completed By           |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Lead hand / Supervisor |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | QC / QA Coordinator    |  |
| <b>Root Cause</b><br><br><div style="display: flex; flex-direction: column; align-items: flex-start;"> <div>Operator <input type="checkbox"/></div> <div>Manufacturing Process <input type="checkbox"/></div> <div>Equip/Tooling <input type="checkbox"/></div> <div>Handling/Preservation <input type="checkbox"/></div> <div>Material <input type="checkbox"/></div> <div>Product Improvement <input type="checkbox"/></div> <div>Process Improvement <input type="checkbox"/></div> <div>Human Factors <input type="checkbox"/></div> </div> |                                                                                                                                   | <b>FAULT CATEGORY</b><br><br><div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Pressure/Forced<br/> <input type="checkbox"/> Bending<br/> <input type="checkbox"/> Crushing<br/> <input type="checkbox"/> Cracks<br/> <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist<br/> <input type="checkbox"/> Marks/Chatter<br/> <input type="checkbox"/> Mislabeled         </div> <div style="width: 50%;"> <input type="checkbox"/> Contamination<br/> <input type="checkbox"/> Misaligned/off center<br/> <input type="checkbox"/> BOM/Route<br/> <input type="checkbox"/> Broken/Damage/Defect<br/> <input type="checkbox"/> Incomplete/Unclear Instructions<br/> <input type="checkbox"/> Drill Holes<br/> <input type="checkbox"/> Fit/Function         </div> <div style="width: 50%;"> <input type="checkbox"/> Power Loss/Surge<br/> <input type="checkbox"/> Folio/Program<br/> <input type="checkbox"/> Grain Direction<br/> <input type="checkbox"/> Weld<br/> <input type="checkbox"/> Wrong Stock Pulled<br/> <input type="checkbox"/> Out of Sequence<br/> <input type="checkbox"/> Off-set/Set-up         </div> <div style="width: 50%;"> <input type="checkbox"/> Positioned Wrong<br/> <input type="checkbox"/> Outside Tolerance<br/> <input type="checkbox"/> Drawing<br/> <input type="checkbox"/> Finish<br/> <input type="checkbox"/> Part Lost/Missing<br/> <input type="checkbox"/> Misread         </div> </div> |  |                        |  |
| Other/Details:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                        |  |



**ENGINEERING CHANGE NOTICE**  
**DART AEROSPACE LTD**

|               |            |             |                    |              |                    |           |          |        |         |
|---------------|------------|-------------|--------------------|--------------|--------------------|-----------|----------|--------|---------|
| Date:         | 19.04.17   | Job No.:    | SE19-1027-02       | ADR Yes/No:  | Y                  | ADR Date: | 19.03.18 | ECN #: | 19- 690 |
| Product No.:  | D135-1027  | Created By: | MW                 | Approved By: | <i>[Signature]</i> |           |          |        |         |
| Product Name: | Crosstubes | Checked By: | <i>[Signature]</i> |              |                    |           |          |        |         |

**Reason for Change:**  
replaced MS219-32 Camps (Qty (6)) per saddle) with D5720-041 Clamps (Qty (2) per saddle)

**Documents Released:**  
D5720 Rev. A, IIN-D135-1027 Rev. D, ICA-D135-1027 Rev. 1

IF APPLICABLE:    NCR: \_\_\_\_\_    PAR: \_\_\_\_\_    CAR: \_\_\_\_\_    CIR: \_\_\_\_\_    URF: 19 - 690

PAPERWORK UPDATE ☒    PARTS MUST COMPLY ☒    PREVIOUS PARTS SATISFACTORY ☐

| # | Quality Assurance / Customer Support Actions | Reqd | Resp | Notes | Complete |
|---|----------------------------------------------|------|------|-------|----------|
| 1 | Notify Previous Customers                    | N    |      |       |          |
| 2 | Notify Airbus                                | N    |      |       |          |
| 3 | Notify Leonardo                              | N    |      |       |          |
| 4 | Manufacturing Licensing Agreement Update     | N    |      |       |          |

| #  | Engineering Actions                                      | Reqd | Resp | Notes                                 | Complete                   |
|----|----------------------------------------------------------|------|------|---------------------------------------|----------------------------|
| 5  | Required Documents/Drawings/Item ID's Under Review (URF) | Y    | MW   | URF 19.681 active until GHW Fit Check |                            |
| 6  | Update Master Document List (MDL)                        | Y    | MW   | MDL-D135-1027 Rev. C                  | <i>not for MW 19.04.18</i> |
| 7  | Update Document Record (DR)                              | N    |      |                                       |                            |
| 8  | Update Product Competability Matrix                      | N    |      |                                       |                            |
| 9  | Notify TC / FAA of Change (eg. ICA, 8110-3)              | N    |      |                                       |                            |
| 10 |                                                          |      |      |                                       |                            |

| #  | Document Control Actions                                             | Reqd     | Resp      | Notes | Complete            |
|----|----------------------------------------------------------------------|----------|-----------|-------|---------------------|
| 11 | Move / Update Electronic Files / Design Journal                      | Y        | MG        |       | <i>not 19.04.18</i> |
| 12 | Update Product Specification Files (Bluefiles)                       | Y        | MG        |       | <i>not 19.04.18</i> |
| 13 | Update Approved/Preliminary Dwg PDF Files                            | Y        | MG        |       |                     |
| 14 | Update Product Development Summary (STC applications)                | N        |           |       |                     |
| 15 | Update QSI 021 (TC/FAA STC) and/or STC Approval List                 | N        |           |       |                     |
| 16 | Create/Update Parts / STC Database                                   | Y        | MG        |       | <i>not 19.04.18</i> |
| 17 | Update / Verify Authorized Release Certificate Database              | <i>Y</i> | <i>MG</i> |       | <i>not 19.04.18</i> |
| 18 | Create / Update Change Record Form / Item Card Database              | N        |           |       |                     |
| 19 | Create / Update Packaging Process Plan (PPP)                         | N        |           |       |                     |
| 20 | Red Decals required on Packaging Process Plan (PPP)?                 | N        |           |       |                     |
| 21 | Update Controlled Supplier Documents (Qpulse) Database               | N        |           |       |                     |
| 22 | Update Grey Project Binder / Electronic Project Folder               | Y        | MG        |       | <i>not 19.04.18</i> |
| 23 | Update D-Part / M-Drawing / DSI / DEO Master Binders                 | Y        | MG        |       | <i>not 19.04.18</i> |
| 24 | Update "Royalty Paid to" attribute (Parts sold under Dart USA STC's) | N        |           |       |                     |
| 25 |                                                                      |          |           |       |                     |

**Description / Action:**  
Update BOMs and Routes for D135-1027-101/-103/-201/-203

ECN Verified & Complete: \_\_\_\_\_ Date: \_\_\_\_\_

## Change Record

PAGE 1 OF 1

Part Number: D135-1027-241

Description: STD HEIGHT AFT CROSSTUBE ASSEMBLY

[illegible]